

Integration Panel Recommendations - December 1998

Location/ Stressor	Stage 1 Action	Rationale	Project	Proposal Solicitation or Directed Action	Estimated Cost
Battle Creek (fish passage)	72. Remove diversion dams or construct fish passage facilities for hydropower facilities.	PG&E owns and operates two small reservoirs and seven unscreened diversions on Battle Creek and its tributaries. The facilities can impede the migration of juvenile and adult anadromous fish, and the unscreened diversions can entrain juvenile anadromous fish. Removing dams and diversions, where possible, will provide greater access to spawning and rearing habitat and reduce entrainment losses of anadromous fish. For those facilities that are not removed, equipping them with fish passage facilities and screening the currently unscreened diversions will also help to improve access to habitat and reduce entrainment.	Ask negotiators to bring forward a complete restoration package that includes Actions 72, 73, and 74 and focusses on dam removal to the maximum extent possible. Proposal include a substantial cost-share by the current operator. Project to be managed by either USFWS or USBR (both are involved in negotiations)	Directed Action Consider funding for water acquisition component from FY 98 Water Acquisition Program funds and fund remainder from FY 99.	\$30 million +/- ¹

¹All costs for designated actions are preliminary estimates to be confirmed by January. Where only one number is presented, the costs are expected to be within a range of 10 to 20%.

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Battle Creek (<i>water management</i>)	73. Improve streamflows.	The PG&E hydropower facilities on Battle Creek were capable of diverting up to 98% of the streamflow, which impeded fish passage and elevated stream temperatures. An interim agreement provided for re-operation of the hydropower facilities to provide a greater volume of flow. It is important to provide a long-term solution to ensure adequate streamflows downstream of the hydropower facilities.	See Action 72		
Battle Creek (<i>fish passage</i>)	74. Improve the fish passage facilities at the Coleman National Fish Hatchery.	Coleman National Fish Hatchery has a weir equipped with a fish ladder. The fish ladder provides access to upstream spawning habitat for spring-run and winter-run chinook salmon. The weir is designed to prevent fall-run chinook salmon from migrating upstream to spawn to prevent hybridization of the species. Improving the weir to better block upstream access to fall-run chinook salmon will help to preserve the genetic integrity of Battle Creek salmonids.	See Action 72		

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Butte Creek (<i>fish passage, water management</i>)	77. Provide alternative water sources to allow removal of diversion dams, or equip the diversion dams with improved fish passage facilities.	Category III funds have been provided to fund the planning and design phases for the removal of several diversion dams on Butte Creek. Removing these dams will provide better access to spawning and rearing habitat for anadromous fish. It will be important to evaluate the potential removal or upgrading of fish passage facilities for the remaining diversion dams on the creek.	Category III funds have previously been provided for planning for fish passage in the lower reach of Butte Creek in the Butte Sink area. CVPIA is committing \$500,000 in FY 99 funds for the design of several fish passage projects focused preferentially on dam removal with laddering as a second option. Funding should be provided for the remainder of the costs of design of these facilities. Funds would go to USFWS who would enter into an agreement with Ducks Unlimited.	Directed Action	\$750,000+/-
Butte Creek (<i>watershed management</i>)	79. Develop a watershed management plan to control the erosion and transport of fine sediments to the stream channel, to restore riparian habitat, enhance base flows, and reduce water temperatures.	Excessive loads of fine sediment can degrade the spawning habitat and suffocate the incubating eggs of anadromous fish. It can also reduce the production of aquatic invertebrates, which are an important part of the food web. Carefully planned land use activities can help reduce untimely or excessive pulses of fine sediment into the stream channel. Restoring riparian habitat in a watershed can also help reduce the erosion and transport of fine sediments into the stream channel.	Fund implementation of watershed restoration measures being developed in watershed plan previously funded by Category III and CVPIA.	Proposal Solicitation (Need to confirm with Integration Panel. Meeting notes are unclear on whether this listed as a "focused action" or "other beneficial action".)	TBD

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East Delta Habitat Corridor (Cosumnes River) <i>(floodplain/m arsh, river geomorpholo gy)</i>	16. Restore tidal marsh and riparian habitats on McCormack- Williamson Tract in conjunction with other flood control measures.	McCormack-Williamson, a highly flood-prone tract, is planned to be acquired. Breaching McCormack-Williamson levees and restoring the tract to tidal marsh and riparian habitat in conjunction with other flood control efforts can relieve flooding pressure in the North Delta and improve habitat connectivity with the Cosumnes River floodplain. The tract is ideal for restoration to tidal and riparian habitats due to favorable land elevations.	The Nature Conservancy is in the process of acquiring the property with FY 98 funds. Because of local concerns, TNC will hold the property for several years in its current configuration as planning for restoration is completed. During this time, the levees will be maintained and the island farmed using wildlife friendly habitat practices. This involves start up stewardship costs for both of these activities.	Designated Action	TBD
East Delta Habitat Corridor (Cosumnes and Mokelumne rivers) <i>(floodplain/m arsh, river geomorpholo gy)</i>	15. Restore and rehabilitate a contiguous corridor of riparian, shaded riverine aquatic, tidal freshwater, and seasonal and perennial habitats along the South Fork of the Mokelumne River.	Restoration of this corridor will bolster rearing and migration of salmon from the Mokelumne and Cosumnes rivers. It is an opportunity to restore critical ecological processes including flood processes.	The USACE is negotiating a cost-sharing agreement with local interests including the Sacramento Area Flood Control Agency and the Nature Conservancy for planning for both ecosystem restoration and flood control improvements for this area. This planning is important not only for the restoration potential of these corridors but because of the link between changes in McCormack-Williamson Tract and downstream flood issues. The USACE planning effort requires a 50% cost share.	Designated Action	TBD
East Delta Habitat Corridor <i>(floodplain/m arsh, river geomorpholo gy)</i>	17. Restore tidal marsh and riparian habitats on Georgianna Slough.	Major migration corridor for salmon. Substantial losses to salmon occur due to predation and entrainment.	Solicit proposals to begin working on restoration along this important migration corridor. Proposals should be for design or implementation of projects and should include coordination with landowners and address flood control and recreational boating issues.	Proposal Solicitation	TBD

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East Delta Habitat Corridor (floodplain/marsh, river geomorphology)	19. Restore in-channel islands and experiment with multiple techniques to allow natural sediment accretion to create new in-channel islands and to protect in-channel shallow-water habitat from boat wakes. (Stage 1 Action #3 is similar.)	Boat wakes have significantly reduced the quantity and quality of in-channel habitat. Multiple approaches should be used to protect existing in-channel islands including limiting boat speeds in sensitive areas, and installing wave attenuation structures, and also to encourage natural creation of islands.	Planning and design work for demonstration projects on in-channel islands has been previously funded. If they have successfully completed this phase, the next phase, presumably construction, should be considered for funding.	Proposal Solicitation	TBD
Suisun Marsh	27. Restore tidal wetlands on Suisun Marsh and Van Sickle Island. (floodplain/marsh, river geomorphology)	Restoration of tidal wetlands will provide habitat for native fishes, rare plants and wildlife. It will also expand the spatial extent of the low-salinity zone (zone of high biological productivity) to increase estuarine productivity.	Solicit tidal restoration projects in this area.	Proposal Solicitation	TBD

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Suisun Marsh (<i>entrainment, population management</i>)	28. Screen priority I, II and III diversions in Suisun Marsh.	Currently, there is a conflict between the potential for listed fish species to be entrained and the need for water for wetlands management. Furthermore, there are significant questions that remain unanswered about the relative biological benefits of screening these diversions relative to diversions in other locations. Given the biological questions, CALFED has not funded new fish screens in the last few rounds of projects.	Solicit a study to determine the relative biological impacts of these types of diversions to assist decision-makers.	Proposal Solicitation	TBD
General Delta	41. Evaluate the need to screen small diversions in the Delta. (<i>entrainment, population management</i>)	Unlike in riverine environments where unscreened diversions may affect a large portion of fish, the benefits of screening small diversions throughout the Delta is unknown. An evaluation should be undertaken to identify diversion effects on species and locations in the Delta where screening small diversions is a high priority.	Two general topics are recommended for consideration. They include a synthesis of existing information on entrainment in the Delta at small diversions and an evaluation of entrainment effects at actual diversions if willing landowners can be identified.	Proposal Solicitation	TBD

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Clear Creek (fish passage)	63. Relocate and rebuild McCormick-Saeltzer Dam to improve fish passage while preserving the diversion.	McCormick-Saeltzer Dam is a 15-foot high dam located on Clear Creek approximately 8 miles upstream of the confluence with the Sacramento River. The Dam can prevent the upstream migration of adult anadromous fish, blocking access to spawning habitat. Any juvenile fish emigrating downstream can suffer mortality or stress from their spill over the dam or from predation downstream of the dam. Category III funds have help finance a study to construct a new low-head dam (approximately 4 feet high at a flow of 150 cfs) with improved fish passage facilities, which would allow the removal of the current McCormick-Saeltzer Dam. Construction of the new facilities and removal of the existing dam will provide greater access to approximately 12 miles of spawning habitat above the dam.	Although CVPIA annual work plans for this activity do not contain sufficient funds to complete construction, CVPIA staff are reasonably sure that they have the ability to complete the project.	CVPIA - check to ensure that they can fund any needed work in FY 99. Potentially reconsider based on CVPIA funding level.	0

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North Delta Habitat Corridor (floodplain/m arsh, introduced species)	11. Plan and implement restoration of tidal and seasonal wetlands on Little Holland Tract, Prospect Island, Liberty Island, and lower Yolo Bypass in conjunction with the eradication and control of nuisance, introduced aquatic plants.	Prospect, Liberty, and Little Holland are ideal locations to restore tidal marshes. Most of the land is publicly owned, therefore it will reduce the need to convert additional agricultural land to habitat. Since they are located at the outlet of the Yolo Bypass, they are more susceptible to flooding. The islands are not as subsided as other Delta islands, so they will require less effort to construct suitable land elevations for habitat. Restoration can build upon existing tidal marsh habitat on the margins of these islands. Tidal marsh restored on these islands will connect with the important riparian and seasonal floodplain habitats in the Yolo Bypass, tidal marsh and riparian habitats in the Cache Slough complex, Steamboat Slough, and the Sacramento River.	Prospect Island is expected to go to construction shortly. Although land acquisition, operations and maintenance, and construction are expected to be funded by other funding sources, the monitoring for this project has not yet been funded. To better evaluate habitat restoration in the North Delta, it is proposed that the aquatic monitoring for Prospect Island be as comprehensive as possible so that future restoration efforts can be improved.	Directed Action	\$1 million +/-

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Central and West Delta (floodplain/marsh, river geomorphology, introduced species)	21. Restore Frank's Tract to tidal marsh using clean dredge materials and natural sediment accretion in conjunction with the eradication and control of nuisance, introduced aquatic plants.	Frank's Tract can be restored to the largest expanse of tidal wetlands in the Delta with no impact to agriculture. Frank's Tract levees were breached and the island has been flooded since the early 1900s. The subsided island is deep and provides warm-water habitat for predatory, non-native fish. The island bed must be elevated through a combination of dredge disposal, natural sediment accretion, and peat accumulation. Frank's Tract will be a functional component of the San Joaquin River corridor, a major fish rearing and migration area. Reclaiming the tract must also occur in conjunction with the eradication and control of nuisance, introduced aquatic plants for restoration to be most beneficial to native species.	Second phase of previously funded proposal to evaluate restoration of Frank's Tract if they have demonstrated their readiness for the next phase of funding.	Proposal Solicitation (Need to confirm with Integration Panel. Meeting notes are not clear on whether this is a "focused action" or a "other beneficial action".)	TBD
Tuolumne River	47. Isolate gravel pits connected to the river channel.	Old gravel mining operations created large pits in Tuolumne River floodplains. Insufficient levees designed to separate the mining pits from the river have been breached during high flow events. The dredger pits can elevate water temperatures, and they provide habitat for both native and exotic fish species that prey upon juvenile anadromous fish. Isolating these pits from the active channel could help to reduce water temperatures and the loss of juvenile fish to unnaturally high levels of predation.	Two major gravel pit restoration projects are being developed on the Tuolumne River, the Special Run-Pool 9/10 project and the Mining Reach Project. SRP 9/10 is not expected to go to construction this year but there is a need for some baseline monitoring and a small repair in a section of berm along the river. The Mining Reach project is expected to go to construction this summer and CVPIA is putting funds into construction. Additional funds are needed to cover the full cost of the project.	Designated Actions	\$160,000 for SRP 9/10 project to USFWS to work with TID. ² \$4,893,000 for the Mining Reach project ³

² During the Integration Panel meeting the first cost estimate was quite a bit higher than this figure.

³ During the Integration Panel meeting the first cost estimate was quite a bit lower than this figure.

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Tuolumne River (floodplain/m arsh, river geomorpholo gy)	43. Conduct a feasibility study to construct setback levees, and purchase accompanying flood easements.	The Tuolumne River currently has a capacity to convey approximately 9,000 cfs. The 1997 peak flow on the Tuolumne was 60,000 cfs. The Governor's Flood Emergency Action Team recommended that the Army Corps of Engineers examine increasing the channel capacity of the Tuolumne to accommodate a volume of 20,000 cfs. Constructing setback levees could help to provide increase floodway capacity while providing ecological benefits, such as restoring stream meander and reconnecting channels with a larger percentage of their historical floodplains.	While the larger floodway project is being developed, the NRCS has targeted approximately \$1.5 million in funds for 1200 acres of floodplain restoration easements on the Tuolumne and San Joaquin rivers consistent with the higher release rate. Because the NRCS has a per-acre cap on these easements, they require partner funding for these easements. They currently have 4 landowners on the Tuolumne and 5 on the San Joaquin who have applied for the program. Partner funding required for these easements is approximately \$1,200,000 to \$1,500,000.	Designated Actions Provide cost-sharing on NRCS easements along the Tuolumne and San Joaquin rivers.	\$1.2 to 1.5 million
Tuolumne River	49. Restore the sediment regime by relocating instream gravel mining operations and evaluating the need to augment gravel supplies. (river geomorphology)	The construction of dams and gravel mining in the active channel reduce the amount of gravel available to form important aquatic and riparian habitat. Since it is infeasible to reduce the effects of dams upon the sediment regime, it is critical to relocate instream augmentation projects.	Begin the development of a long term sediment management program for the Tuolumne River.	Proposal Solicitation	TBD

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Merced River (river geomorphology)	51. Isolate dredger pits from the active river channel.	Old gravel mining operations created large pits in Merced River floodplains. Insufficient levees designed to separate the mining pits from the river have been breached during high flow events. The dredger pits can elevate water temperatures, and they provide habitat for both native and exotic fish species that prey upon juvenile anadromous fish. Isolating these pits from the active channel could help to reduce water temperatures and the loss of juvenile fish to unnaturally high levels of predation	Two gravel pit isolation projects are currently being developed. One, the Western Stone project is in the design stage. CVPIA has previously funded a portion of the design but they need a \$125,000 cost share which would be provided through a designated action. The second project, the Ratzlaff project, is scheduled to go to construction this summer with CVPIA and Four Pumps funding and an additional \$1.5 million is required due increased materials costs. Another gravel pit project in the San Joaquin basin is the Wilms project on the Stanislaus River. This project may not go forward and so funds may be redirected from Wilms to Ratzlaff as a designated action. Otherwise, the project should be included in the proposal solicitation. Both projects should be reviewed to determine if they are designed to withstand a high enough flow.	Directed Action/ Proposal Solicitation	Western Stone Project \$125,000 Ratzlaff Project \$1,500,000
Sacramento River (floodplain/marsh, river geomorphology)	55. Protect, enhance and restore the meander belt between Red Bluff and Chico Landing.	The Sacramento River still meanders freely for more than 100 miles between Red Bluff and Chico Landing, dynamically eroding existing banks while forming new banks. Continuation of the SB 1086 effort to purchase riparian land or conservation easements will help protect and expand the existing meander belt, thereby preserving or enhancing many of the ecological processes and habitats that support a diversity of plant, fish and wildlife species.	In addition to the currently funded acquisition and restoration efforts, several studies have been suggested by the SB 1086 program to address potential changes in hydrology, local economic impacts, and other issues. These studies are important parts of the SB 1086 process and will address many local concerns.	Proposal Solicitation	TBD

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Sacramento River (<i>fish passage and entrainment</i>)	ACID fish screen and passage (not currently listed as a Stage 1 Action)	ACID's diversion has long been identified as a high priority entrainment and passage problem.	Although this is a CVPIA line item, it has not been fully funded.	Designated Action	TBD
Yuba River (<i>fish passage</i>)	80. Evaluate options to improve fish passage upstream and downstream of Daguerre Point Dam on the Yuba River. 81. Conduct a feasibility study of removing Daguerre Point Dam.	Daguerre Point Dam can impede the migration of anadromous fish. Past efforts to equip the dam with adequate fish passage facilities have been largely unsuccessful. Removing the dam would provide easier access to an additional 12 miles of upstream habitat.	A USACE planning study was previously funded and the only action needed is to ascertain the status of that study and determine if a request needs to be made to revitalize that work.	None	0
American River	Corridor Management Plan (not currently listed as a Stage 1 Action)		A proposal to develop a corridor management plan for the American River would assist CALFED in determining what restoration actions to fund in this area.	Proposal Solicitation	TBD

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Population Management	90. Evaluate hatchery management and release operations to minimize threats to wild populations of anadromous fish. <i>(population management)</i>	Hatchery-produced fish may compete with or prey upon wild populations of anadromous fish. Yet hatchery-produced fish may be critical in maintaining viable populations of species through critical events such as dry years.	An integrated statewide hatchery management plan should be developed in cooperation with the hatchery managers and should include an outside assessment of existing practices. (\$250,000 of state funds is set aside for this topic.) In addition, the Integration Panel has designated a subgroup to report back in January on additional coded wire tagging.	Proposal Solicitation	TBD
Water Management	Evaluation of flow needs and opportunities. (Not currently identified as a Stage 1 Action.)		Efforts to evaluate the timing of flows, reparation of reservoirs, biological needs, flood control needs, hydrograph, hydrology, floodplain topography (with sufficient fine detail to address biological needs) should be developed so that flow needs can be addressed comprehensively, both through acquisition and through reparation.	Proposal Solicitation	TBD
Water Management	Prioritization and evaluation of potential water purchases. (Not currently identified as a Stage 1 Action.)	In order for a water acquisition program to be successful, a process to identify biological priorities is needed.	In coordination with CVPIA water acquisition program and AFRP, develop guidelines for water acquisition, a framework to prioritize purchases, and identify a small group to evaluate potential projects using the guidelines and framework.	Proposal Solicitation (?)	TBD

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Water Quality	Evaluation of the role of wetlands in the Delta in production of Total Organic Carbon.	Wetlands restoration projects can potentially produce TOC which may adversely impact drinking water quality. This potential can vary by age of the wetlands, season of the year, location and operation of the wetlands, and other factors.	An evaluation of new and existing wetlands is needed to determine what their impacts are on TOC at municipal drinking water diversions. This study should be coordinated with the existing USGS study on organic matter in the Delta and should include both field work and modeling. Tentatively, the DWR Municipal Drinking Water Quality group, which includes academics and other agencies, has been identified as the most appropriate group to undertake this work.	Designated Action	\$500,000 to \$1,000,000
Water Quality	86. Fund studies to identify sources of mercury contamination and potential solutions for controlling mercury contamination.	The Cache Creek watershed is a significant source of mercury contamination in the Bay-Delta ecosystem. Identifying sources of contamination and methods for controlling the transport of mercury will help protect downstream water quality and habitats.	A designated action should be developed in partnership with the interested parties with potential cost-sharing by the USACE.	Designated Action	\$3,600,000

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Water Quality	Fund evaluation and control of factors contributing to the dissolved oxygen problems in the San Joaquin River near Stockton.	Currently, low dissolved oxygen can adversely affect migrating salmon in the San Joaquin River. Field studies are needed to quantify the relative contributions of various sources, determine the oxygen depleting mechanisms, compare causes and characteristics of spring and fall problems, develop accurate models to determine what substances introduced into the river will produce DO sags, identify and test new management strategies, and evaluate effectiveness of current management strategies.	Currently, San Joaquin County has been funded to address this problem. Proposals should be solicited to expand or continue this effort as needed.	Proposal Solicitation	\$500,000 to \$600,000
Water Quality	Discharge Treatment of Selenium	Different treatment processes are being developed to efficiently remove selenium from discharges and runoff.	Solicit proposals to build on previously funded treatment efforts.	Proposal Solicitation	TBD
Water Quality	Improvement of Real Time Water Quality Program on the San Joaquin	Water quality in runoff from the San Joaquin valley is generally poor. It can be managed so that it does not create as much of an impact on the San Joaquin and the Delta if information is available on a real-time basis.	Build on previously funded real time water quality program by adding stations, water temperature monitoring, and expanding the system as needed.	Proposal Solicitation	TBD
Introduced Species	31, 32, 33, 34, and other actions in tributaries	Introduced species have a profound adverse impact on the entire Bay-Delta watershed and its species.	Solicit proposals for prevention, eradication, and control programs which do not cause significant redirected impacts. Seek guidance from previously funded effort to prioritize introduced species actions and to select actions for funding in FY 99.	Proposal Solicitation	TBD